

Alteration of the Intra- and Cross- Hemisphere Posterior Default Mode Network in Frontal Lobe Glioma Patients

APPENDIX PART

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The appendix explicitly stated the details of the statistical analysis for explaining the kind of data to which the several *t*-tests have been applied.

Chart 1 Statistical description of the functional connectivity strength in the patient group.

Item		IPCC-ITPJ	IPCC-rTPJ	rPCC-ITPJ	rPCC-rTPJ
Mean		0.647	0.636	0.638	0.668
95% confidence interval of mean	Lower limit	0.585	0.568	0.568	0.593
	Upper limit	0.710	0.709	0.709	0.743
Median		0.616	0.639	0.618	0.705
Standard deviation		0.133	0.147	0.150	0.159
Minimum		0.401	0.409	0.350	0.374
Maximum		0.946	0.916	0.930	0.938
Interquartile range		0.146	0.200	0.211	0.230

Chart 2 Statistical description of the functional connectivity strength in the control group.

Item		IPCC-ITPJ	IPCC-rTPJ	rPCC-ITPJ	rPCC-rTPJ
Mean		0.806	0.735	0.727	0.797
95% confidence interval of mean	Lower limit	0.738	0.645	0.667	0.718
	Upper limit	0.875	0.824	0.787	0.876
Median		0.817	0.762	0.722	0.777
Standard deviation		0.147	0.192	0.129	0.169
Minimum		0.420	0.165	0.471	0.456
Maximum		1.041	1.073	0.937	1.076
Interquartile range		0.204	0.229	0.169	0.252

Chart 3A Description of the statistical parameter in the cross-group unpaired *T*-test in the patients and controls.

Item	Levene's test			<i>t</i> -test				
	Homogeneity of variance	W	<i>P_w</i>	<i>T</i>	Dof	<i>P_t</i>	95% CI	
							Lower limit	Upper limit
IPCC-ITPJ	assumed	0.067	0.797	3.582	38	0.001***	0.069	0.249
IPCC-rTPJ	assumed	0.215	0.646	1.816	38	0.077	-0.011	0.208
rPCC-ITPJ	assumed	0.472	0.496	2.003	38	0.052	-0.001	0.178
rPCC-rTPJ	assumed	0.034	0.854	2.489	38	0.017**	0.024	0.234

‘**’ indicates $P_t < 0.05$, and ‘***’ indicates $P_t < 0.01$

Note: paired or unpaired T-tests are used to analyze the relationship among IPCC-ITPJ, IPCC-rTPJ, rPCC-ITPJ, and rPCC-rTPJ in the intra- and cross- group, respectively. First, from the Levene's test, $P_w > 0.1$ shows that all pairs are homogeneity of variance. Here, The result of the Levene's test is W whose significance is tested against F-test distribution with 0.1 chosen as the level of significance, then P_w is the significant level of W . Then, the *T*-test is applied to observe the significant difference between the intra- and cross- hemispheric functional connectivity for the control and patient group. here, T is the result of *T*-test, **Dof** is the degree of freedom and P_t is the significant level, and **CI** is the confidential interval.

Chart 3B Statistical description of the patients and controls.

Item		Number of samples		Mean	Standard deviation
IPCC-ITPJ	controls	20		0.806	0.147
	patients	20		0.647	0.133
IPCC-rTPJ	controls	20		0.735	0.192
	patients	20		0.636	0.147
rPCC-ITPJ	controls	20		0.727	0.129
	patients	20		0.638	0.150
rPCC-rTPJ	controls	20		0.797	0.169
	patients	20		0.668	0.159

Chart 4 Statistical description of the intra-group relationships among IPCC-ITPJ, IPCC-rTPJ, rPCC-ITPJ, and rPCC-rTPJ determined using a paired T-test ($P < 0.05$) for the patient group.

Item	Mean	Standard deviation	95% CI		<i>T</i>	Dof	<i>P_t</i>
			Lower limit	Upper limit			
IPCC-ITPJ and IPCC-rTPJ	0.011	0.083	-0.028	0.050	0.593	19	0.560
IPCC-ITPJ and rPCC-ITPJ	0.009	0.070	-0.024	0.042	0.576	19	0.572
rPCC-ITPJ and rPCC-rTPJ	-0.029	0.114	-0.083	0.024	-1.153	19	0.263
IPCC-rTPJ and rPCC-rTPJ	-0.032	0.058	-0.059	-0.004	-2.427	19	0.025**

‘**’ indicates $P_t < 0.05$, and ‘***’ indicates $P_t < 0.01$

Chart 5 Statistical description of the intra-group relationships among IPCC-ITPJ, IPCC-rTPJ, rPCC-ITPJ, and rPCC-rTPJ determined using a paired T-test ($P < 0.05$) for the control group.

Item	Mean	Standard deviation	95% CI		T	Dof	P_t
			Lower limit	Upper limit			
IPCC-ITPJ and IPCC-rTPJ	0.072	0.118	0.017	0.127	2.721	19	0.014**
IPCC-ITPJ and rPCC-ITPJ	0.079	0.102	0.031	0.127	3.464	19	0.003***
rPCC-ITPJ and rPCC-rTPJ	-0.070	0.132	-0.132	-0.008	-2.379	19	0.028**
IPCC-rTPJ and rPCC-rTPJ	-0.063	0.122	-0.120	-0.006	-2.300	19	0.033**

‘**’ indicates $P_t < 0.05$, and ‘***’ indicates $P_t < 0.01$

Chart 6 Statistical description of the Pearson correlation coefficients between pairs of functional connectivity strength within the patient group (here, the number of samples is 20).

	IPCC-ITPJ	IPCC-rTPJ	rPCC-ITPJ	rPCC-rTPJ
IPCC-ITPJ	1.000	0.829***	0.886***	0.836***
IPCC-rTPJ	0.829***	1.000	0.741***	0.931***
rPCC-ITPJ	0.886***	0.741***	1.000	0.728***
rPCC-rTPJ	0.836***	0.931***	0.728***	1.000

‘**’ denotes $P < 0.05$ and ‘***’ denotes $P < 0.01$

Chart 7 Statistical description of the Pearson correlation coefficients between pairs of functional connectivity strength within the control group (here, the number of samples is 20).

	IPCC-ITPJ	IPCC-rTPJ	rPCC-ITPJ	rPCC-rTPJ
IPCC-ITPJ	1.000	0.788***	0.733***	0.716***
IPCC-rTPJ	0.788***	1.000	0.636***	0.779***
rPCC-ITPJ	0.733***	0.636**	1.000	0.639***
rPCC-rTPJ	0.716***	0.779***	0.639***	1.000

‘**’ denotes $P < 0.05$ and ‘***’ denotes $P < 0.01$

Chart 8 Description of the statistical parameter in the cross-group unpaired *T*-test in the patients with left frontal gliomas and controls.

Item	Levene's test			<i>t</i> -test			
	Homogeneity of variance	W	P_W	T	Dof	P_t	95% CI
							Lower limit Upper limit
IPCC-ITPJ	assumed	0.465	0.501	2.879	30	0.007***	0.041 0.244
IPCC-rTPJ	assumed	0.484	0.492	1.240	30	0.225	-0.051 0.210
rPCC-ITPJ	assumed	0.002	0.967	1.155	30	0.257	-0.042 0.150
rPCC-rTPJ	assumed	0.323	0.574	1.967	30	0.058	-0.005 0.240

‘**’ denotes $P_t < 0.05$ and ‘***’ denotes $P_t < 0.01$

Chart 9 Statistical description in the intra-group paired analysis of the patients with left frontal gliomas.

Item	Mean	Standard deviation	95% CI		T	Dof	P_t
			Upper limit	Lower limit			
IPCC-ITPJ and IPCC-rTPJ	0.008	0.094	-0.052	0.068	0.310	11	0.762
rPCC-ITPJ and rPCC-rTPJ	-0.006	0.096	-0.067	0.054	-0.233	11	0.820
IPCC-ITPJ and rPCC-ITPJ	-0.009	0.057	-0.045	0.027	-0.553	11	0.591
IPCC-rTPJ and rPCC-rTPJ	-0.024	0.063	-0.064	0.016	-1.308	11	0.218

‘**’ denotes $P_t < 0.05$ and ‘***’ denotes $P_t < 0.01$

Chart 10 Statistical description of the patients with left or right frontal gliomas.

Items		Mean	Number of samples	Standard deviation
Patients with left frontal gliomas	IPCC-ITPJ	0.664	12	0.113
	rPCC-ITPJ	0.673	12	0.129
	IPCC-rTPJ	0.655	12	0.141
	rPCC-rTPJ	0.679	12	0.155
Patients with right frontal gliomas	IPCC-ITPJ	0.623	8	0.164
	rPCC-ITPJ	0.587	8	0.174
	IPCC-rTPJ	0.608	8	0.161
	rPCC-rTPJ	0.651	8	0.174

Chart 11 Description of the statistical parameter in the cross-group unpaired T -test in the patients with right frontal gliomas and controls.

Item	Levene's test			t-test			
	Homogeneity of variance	W	P_W	T	Dof	P_t	95% CI
							Lower limit Upper limit
IPCC-ITPJ	assumed	0.082	0.777	2.889	26	0.008***	0.053 0.314
IPCC-rTPJ	assumed	0.042	0.840	1.643	26	0.112	-0.032 0.285
rPCC-ITPJ	assumed	0.299	0.589	2.354	26	0.026**	0.018 0.263
rPCC-rTPJ	assumed	0.027	0.871	2.051	26	0.050**	0.000 0.293

‘**’ denotes $P_t < 0.05$ and ‘***’ denotes $P_t < 0.01$

Chart 12 Description of the statistical parameter in the intra-group analysis of the patients with right frontal gliomas.

Items	Mean	Standard deviation	95% CI		T	Dof	P_t
			Upper limit	Lower limit			
IPCC-ITPJ and IPCC-ITPJ	0.015	0.068	-0.042	0.072	.615	7	0.558
rPCC-ITPJ and rPCC-rTPJ	-0.064	0.137	-0.179	0.051	-1.318	7	0.229
IPCC-ITPJ and rPCC-ITPJ	0.036	0.082	-0.033	0.105	1.243	7	0.254
IPCC-rTPJ and rPCC-rTPJ	-0.043	0.051	-0.085	0.000	-2.386	7	0.048**

‘**’ denotes $P_t < 0.05$